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Ompok pinnatus, a new species of silurid catfish (Teleostei: Siluriformes: Siluridae) from mainland Southeast Asia

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Abstract.—A new species of silurid catfish, *Ompok pinnatus,* is described from the Chao Phraya and Mekong River drainages in mainland Southeast Asia (Indochina). It belongs to the *O. eugeneiatus* species group and closely resembles *O. eugeneiatus.* Together with *O. eugeneiatus,* it can be distinguished from all other congeners in having an extremely long dorsal fin (about one-fifth SL vs. about one-tenth SL), and from all except *O. eugeneiatus* in having the maxillary and mandibular barbels reaching beyond the base of the caudal fin vs. not reaching that point. It can be distinguished from *O. eugeneiatus* in having a longer dorsal fin, deeper caudal peduncle, shorter mandibular barbels and fewer anal-fin rays.

The family Siluridae is one of the most species-rich of Asian catfishes (Bornbusch, 1995), and yet little is understood of the phylogenetic relationships within the family. One such problematic group demonstrated to be paraphyletic by Bornbusch (1995) is *Ompok* Lacépède, which are medium-sized silurids usually found in lakes and large rivers throughout South and Southeast Asia. According to Bornbusch (1995), there are four distinct clades within *Ompok,* viz. *O. bimaculatus* group, *O. leiacanthus* group, *O. hypophthalmus* group, and *O. eugeneiatus* group.

The *O. eugeneiatus* group currently includes two nominal species: *Ompok eugeneiatus* (Vaillant, 1902) (described from western Borneo) and *O. sabanus* Inger & Chin, 1959 (described from northeastern Borneo). While examining material identified as *O. eugeneiatus* from mainland Southeast Asia (Indochina), differences were observed between them and supposedly conspecific material from Sumatra and Borneo. These differences were found to be significant enough to warrant the recognition of a separate Indochinese species, which is described herein.

Materials and Methods

Measurements were made with a dial caliper and data recorded to 0.1 mm. Counts and measurements were made on the left side of the specimens when possible. In tables and text, subunits of the head are presented as proportions of head length (HL). Head length and measurements of body parts are given as proportions of standard length (SL).

The measurements and terminologies follow largely those of Bornbusch (1991), with the following exceptions: pelvic-fin length is measured from the base to the tip of the second (usually the longest) ray. Caudal-fin length is the length of the first principal (usually the longest) ray of the upper lobe measured from the posterior margin of the hypural complex. Head width is measured at the opercle (across its widest point) but discounting any lateral projection of the branchiostegal membranes. Head depth is measured at the base of the occipital process. Interorbital distance is determined at the dorsalmost point (the narrowest distance) between the orbital margins. Institutional acronyms follow Leviton et al.

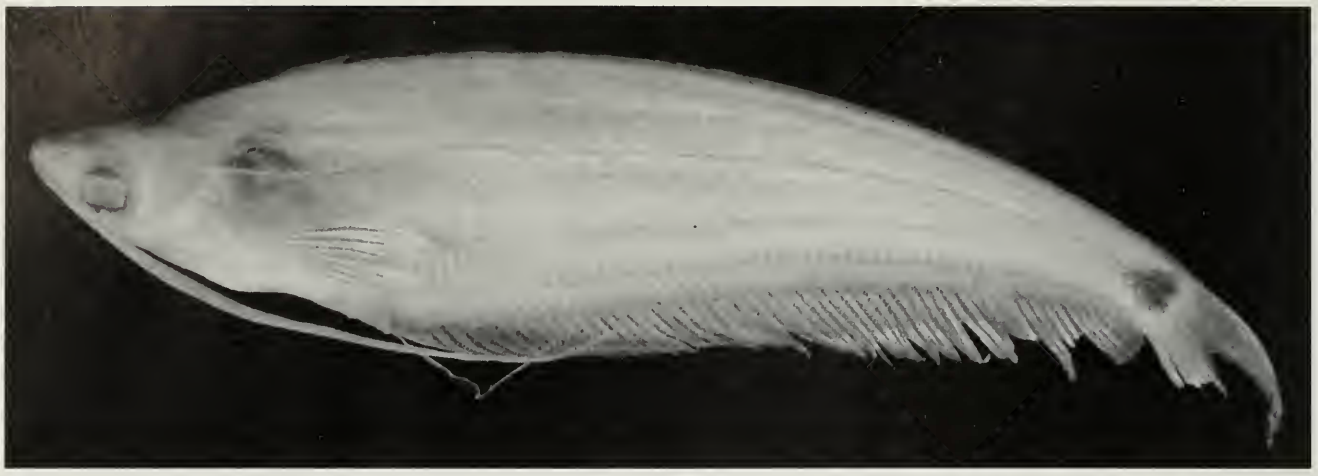

Fig. 1. *Ompok pinnatus,* holotype, UMMZ 232679,80.5 mm SL, Cambodia: Tonle Sap at Kompong Chhnang.

(1985) with the addition of CMK (collection of Maurice Kottelat, Cornol, Switzerland).

Comparative material.—Ompok eugeneiatus: CMK 16344, 1 ex., 72.5 mm SL; Borneo (Indonesia): Kalimantan Barat, Kapuas River drainage, Sungai Letang near Kampung Kandung Suli. UMMZ 209881, 1 ex., 91.3 mm SL; Borneo (Indonesia): Kalimantan Barat, Danau Piam near Ketungau, 38 km NNE of Sintang. ZMA 113.097, 1 ex., 104.8 mm SL; Sumatra: Taluk. ZMA 120.537, 1 ex., 100.2 mm SL; Sumatra (Indonesia): Jambi, Batang Hari. ZRC 11819–11820, 2 ex., 72.7–78.7 mm SL; Peninsular Malaysia: Pahang, Tasek Chini. ZRC 30458, 1 ex., 92.8 mm SL; Peninsular Malaysia: Pahang, Sungai Chini. ZRC 38803, 3 ex., 61.0–62.3 mm SL; Borneo (Indonesia): Kalimantan Barat, Kapuas River drainage, Danau Basuk, lake adjacent to Kapuas immediately downriver of Jongkong. ZRC 39036, 2 ex., 82.7–84.5 mm SL; Sumatra (Indonesia): Riau, Sungai Bengkwang, tributary of Batang Kuantan (Indragiri River), 4 hours downstream of Rengat. ZRC 41678, 5 ex., 37.7–86.7; Sumatra (Indonesia): Jambi, from aquarium trade.

Ompok sabanus: FMNH 44828, 1 ex., holotype, 131.6 mm SL; FMNH 44829, 11 ex., paratypes, 101.6–117.8 mm SL; Borneo (Malaysia): Sabah, Lahad Datu district, Segama River at Segama Estate.

Table 1.—Morphometric data for *Ompok pinnatus.*

In %SL	
Head length	17.9–19.6
Head width	9.7–10.5
Head depth	11.7–13.4
Predorsal distance	26.1–28.5
Preanal length	31.9–35.3
Prepelvic length	28.9–33.2
Prepectoral length	17.9–20.0
Body depth at anus	19.7–23.4
Depth of caudal peduncle	5.0–6.0
Pectoral-spine length	11.2–13.1
Pectoral-fin length	18.0–20.9
Length of dorsal fin	21.1–24.2
Pelvic-fin length	4.2–6.1
Length of anal-fin base	66.5–69.9
Caudal-fin length	18.6–23.9
In %HL	
Snout length	32.8–37.5
Interorbital distance	43.5–47.0
Eye diameter	21.7–25.8
Maxillary barbel length	425.2–505.3
Mandibular barbel length	495.4–613.3

Ompok pinnatus, new species
Fig. 1

Ompok eugeneiatus.—Bornbusch, 1995: 44 (in part).

Ompok sp. cf. *eugeneiatus.*—Rainboth, 1996: 149; Lim et al., 1999: 383.

Holotype.—UMMZ 232679, 80.5 mm SL; Cambodia: Tonle Sap at Kompong Chhnang, fishing lot 9 in second channel E

of town; W. J. Rainboth, C. Rotha & N. van Zalinga, 27 Feb 1995.

Paratypes.—UMMZ 186749, 1 ex., 67.1 mm SL; Thailand: Maharaj province, Koh Tong canal (tributary of Chao Phraya River) 17.5 km N of Ayutthaya; A. Witt & S. Tongsangah, 12 Aug–12 Sep 1964. UMMZ 232375, 2 ex., 67.4–71.5 mm SL; Cambodia: Kandal, Prek Ta Pov, 11 km S of Phnom Penh; W. J. Rainboth, 2 Feb 1995.

Diagnosis.—*Ompok pinnatus* can be distinguished from congeners in uniquely having the following combination of characters: greatly elongated dorsal fin (about 20%SL vs. 10–15%SL) and barbels (extending beyond caudal fin), head width 9.7–10.5%SL, caudal peduncle depth 5.1–6.0%SL, and 53–58 anal-fin rays.

Description.—Body and head laterally compressed. Dorsal profile of body slightly convex, descending gently from dorsal-fin origin to snout tip, and again from the posteriormost dorsal-fin ray to the caudal peduncle. Anterior profile of snout rounded, dorsal profile of nuchal region concave. Anterior pair of nostrils tubular and located anteromedial to maxillary barbel base. Posterior pair of nostrils bordered by fleshy dorsal and ventral membranes and situated posteromedial to maxillary barbel base.

Mouth terminal; gape oblique. Rictal lobes narrowly continuous at rictus and deeply subtended by submandibular groove, with upper rictal lobe lacking skin fold.

Teeth villiform. Dentary teeth in bands that narrow posteriorly, teeth extending from symphysis to near posterior end of jaw; premaxillary teeth in broader bands, teeth extending from symphysis to near posterior end of jaw. Vomerine teeth in a single crescentic band.

Maxillary barbels reaching base of caudal peduncle when extended posteriorly. Single pair of mandibular barbels present, originating slightly anterolateral to gular fold; barbels flattened for most of length, reaching beyond tips of caudal fin when extended posteriorly.

Eyes small, subcutaneous; located in middle of head; visible dorsally, and more so ventrally.

Gill membranes separate and free from isthmus. Anterior third of left and right membranes overlapping. Branchiostegal rays 9. Gill rakers short, anteriormost rakers on lower first arch small and widely spaced; 4 on epibranchial and 16–18 on ceratobranchial.

Pectoral fin with convex distal margin and 9–10 branched rays. Proximal two-thirds of first pectoral-fin element ossified into a spine without anterior and distal serrae. Pectoral spine and articulated segments of first pectoral-fin element sexually dimorphic in mature individuals. Pectoral spine of males broad and somewhat flattened dorsoventrally, dentated with 3–4 distinct posterior serrae that increase in size distally; proximal articulated segments with 4 well-developed posterior serrae, decreasing in size distally. Pectoral-fin spine in females and juveniles more slender than in adult males, without serrae on posterior edges of either spine or articulated segments.

Pelvic fin with convex distal margin and i,6 rays. Dorsal fin with pointed distal margin (first dorsal-fin ray longest), with i,3 rays; segments of first ray not ossified to form spine. Anal fin with straight distal margin and 53–58 rays; not confluent posteriorly with caudal fin. Integument over anal fin thickened proximally for slightly more than half of ray lengths; fin-ray erector muscles extending along anterior edges of anal-fin rays, ventralmost extent of muscles same as that of thickened integument. Caudal fin strongly forked; principal rays i,7,7,i. Urogenital papillae of both sexes located immediately posterior to insertion of pelvic fins. Vertebrae 12 + 36 = 48, 11 + 38 = 49 or 12 + 37 = 49. Morphometric data as in Table 1.

Color.—Head and body dark yellow, with scattered melanophores on dorsal surfaces, flanks and thickened integument over anal fin; ventral surfaces of head, breast and belly with lighter covering of scattered me-

lanophores. Faint black midlateral line variably present, usually as series of scattered melanophores broadening at base of caudal peduncle to form dark roughly triangular spot. Maxillary and mandibular barbels dark yellow, with color gradually fading distally. Fins hyaline, with small dark-brown spots occasionally present.

Distribution.—Known only from the Chao Phraya and Mekong River drainages (in Thailand and Cambodia, respectively).

Etymology.—From the Latin pinnatus, meaning feathered or plumed. In reference to the very long dorsal fin and barbels of this species. Used as a noun.

Remarks.—The *O. eugeneiatus* group is characterised by the following combination of characters (after Bornbusch 1995): (1) cartilaginous plates supporting the mandibular barbels enlarged, roughly circular in shape, and each with a dorsolateral process that contacts the dorsal edge of the anterior ceratohyal; (2) anterior process of the hyomandibular short and extending anterodorsally to or below the level of the cranial facet; and (3) the presence of 4 dorsal-fin rays. Bornbusch (1995) examined cleared and stained material of *O. pinnatus* (which he identified as *O. eugeneiatus*), and found them to possess the characters above, thus placing *O. pinnatus* within the *O. eugeneiatus* species group. In the following discussion, detailed comparison of *O. pinnatus* with congeners will be confined largely to within the *O. eugeneiatus* group, which contains only two other nominal species: *O. eugeneiatus* and *O. sabanus.*

Ompok pinnatus differs from all congeners in having a greatly elongated dorsal fin (about 20%SL vs. 10–15%SL), and (except for *O. eugeneiatus*) barbels (extending beyond caudal fin vs. not reaching that point). It differs further from *O. sabanus* in having a narrower head (9.7–10.5%SL vs. 10.8–11.9).

Ompok pinnatus further differs from *O. eugeneiatus* in having a deeper caudal peduncle (5.1–6.0%SL vs. 3.9–4.8), shorter mandibular barbels (495.4–613.3%HL vs. 638.5–849.4) and usually fewer anal-fin rays (53–58 vs. 58–62).

Ompok eugeneiatus and *O. pinnatus* share extremely long barbels extending beyond the caudal fin (vs. extending just beyond midway along body length in *O. sabanus* and other members of the Siluridae), which is apparently derived within the *O. eugeneiatus* species group. On the basis of this unique derived character, *O. pinnatus* and *O. eugeneiatus* are hypothesized to be sister species. Given that *O. pinnatus* is restricted to the Chao Phraya and Mekong River drainages in mainland Southeast Asia, whereas *O. eugeneiatus* is found only in river drainages in central Sumatra and western Borneo, this hypothesized relationship conforms to the general biogeographic pattern in Southeast Asian siluriforms in which one sister species is found in mainland Southeast Asia (Indochina) and the other in Sundaic Southeast Asia (chiefly Sumatra and Borneo). A model of the historical biogeography of species with this pattern of distribution has been proposed by Bornbusch & Lundberg (1989), who hypothesized that the post-Pleistocene isolation of the North Sunda River system resulted in speciation.

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